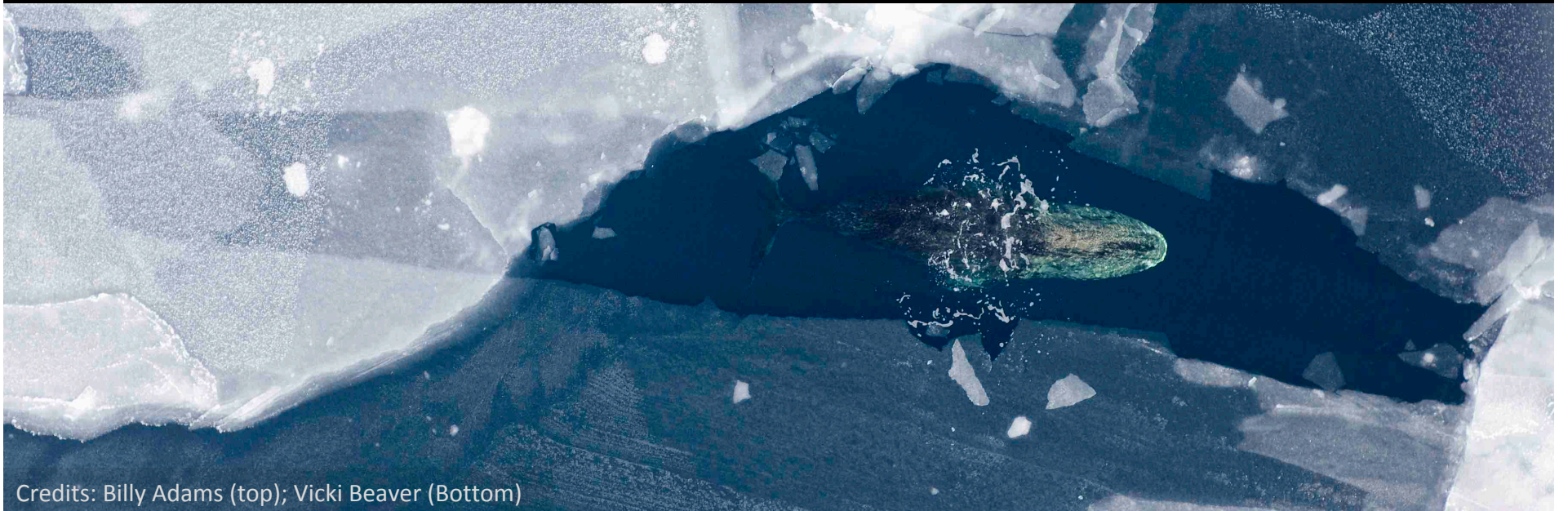




Ice for Whaling, Ice for Whales: **Observing the Current State of an Arctic Foodshed**



Credits: Billy Adams (top); Vicki Beaver (Bottom)



Utqiagvik



An aerial photograph showing a coastal town on the left side, with buildings and roads visible. The rest of the image is dominated by a vast expanse of sea ice, which appears textured and uneven. A dark, open body of water is visible on the right side, where the ice has melted or broken apart. The overall scene illustrates the environment where community observations of sea ice change are being conducted.

Community observations of sea ice change at Utqiagvik

- Increased variability in ice conditions
- Less abundant multi-year ice
- Later fall freeze-up
- Less stable ice in springtime

An aerial photograph showing a coastal town on the left side, with buildings and roads visible. The town is situated on a narrow strip of land. To the right of the town, the land meets a large expanse of sea ice. The ice is textured and appears to be broken into smaller pieces or has a rough surface. The dark water of the ocean is visible on the far right edge of the image.

Can we simultaneously observe:

1. Sea-ice conditions from a scientific perspective, and

2. How communities are using sea ice?

What useful products can be provided to the community?



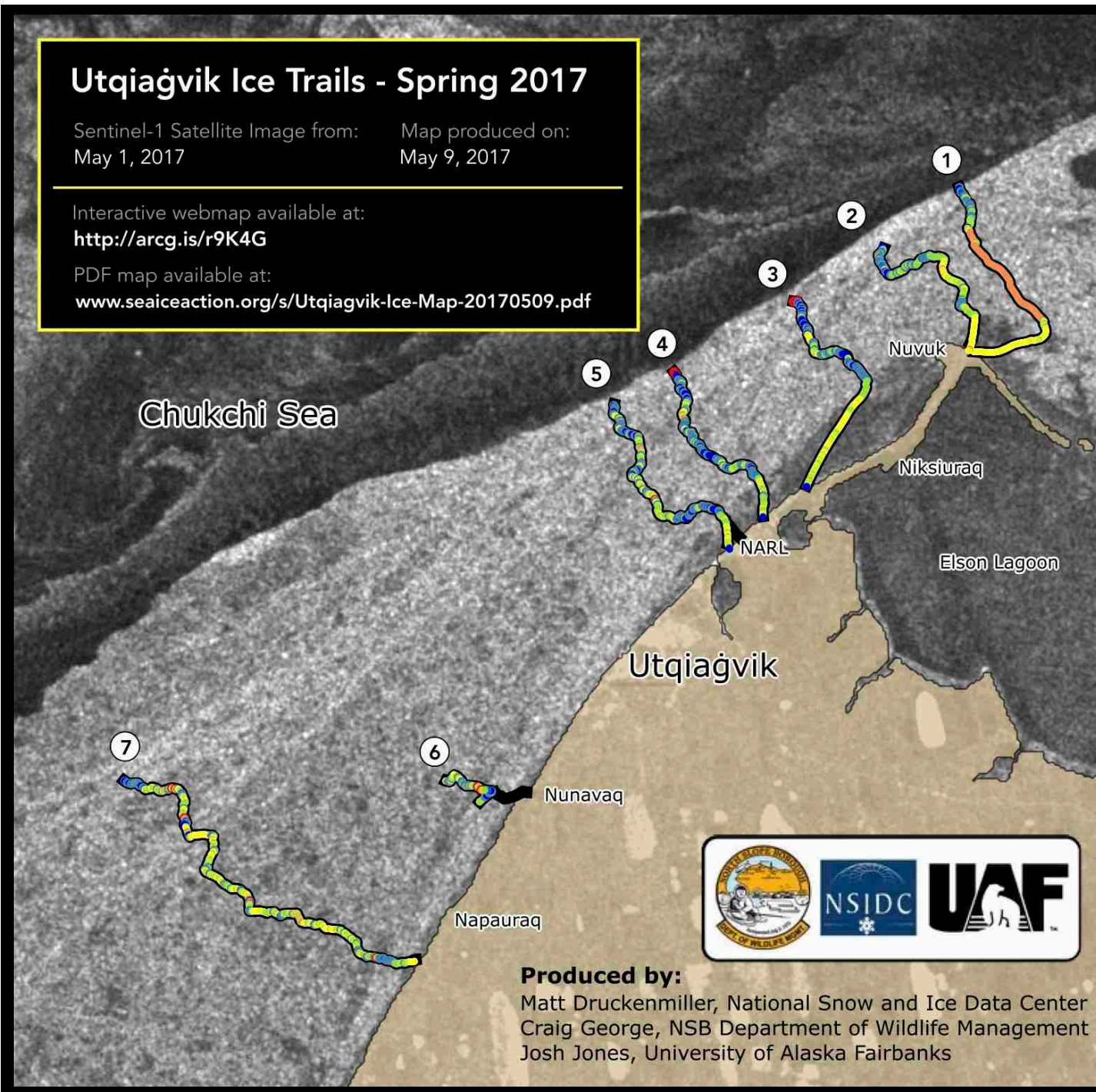
Utqiagvik Ice Trails - Spring 2017

Sentinel-1 Satellite Image from:
May 1, 2017

Map produced on:
May 9, 2017

Interactive webmap available at:
<http://arcg.is/r9K4G>

PDF map available at:
www.seaiceaction.org/s/Utqiagvik-Ice-Map-20170509.pdf



Ice Thickness (Feet)

- 0.7 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0
- 5.0 - 11.0
- 11.0 - 14.0
- 14.0 - 40.0

Crews

- 1: Savik
- 2: Arey
- 3: Saavgak
- 4: Tuigan
- 5: Little Kupaaq; Quvan
- 6: Hopson-II
- 7: Leavitt



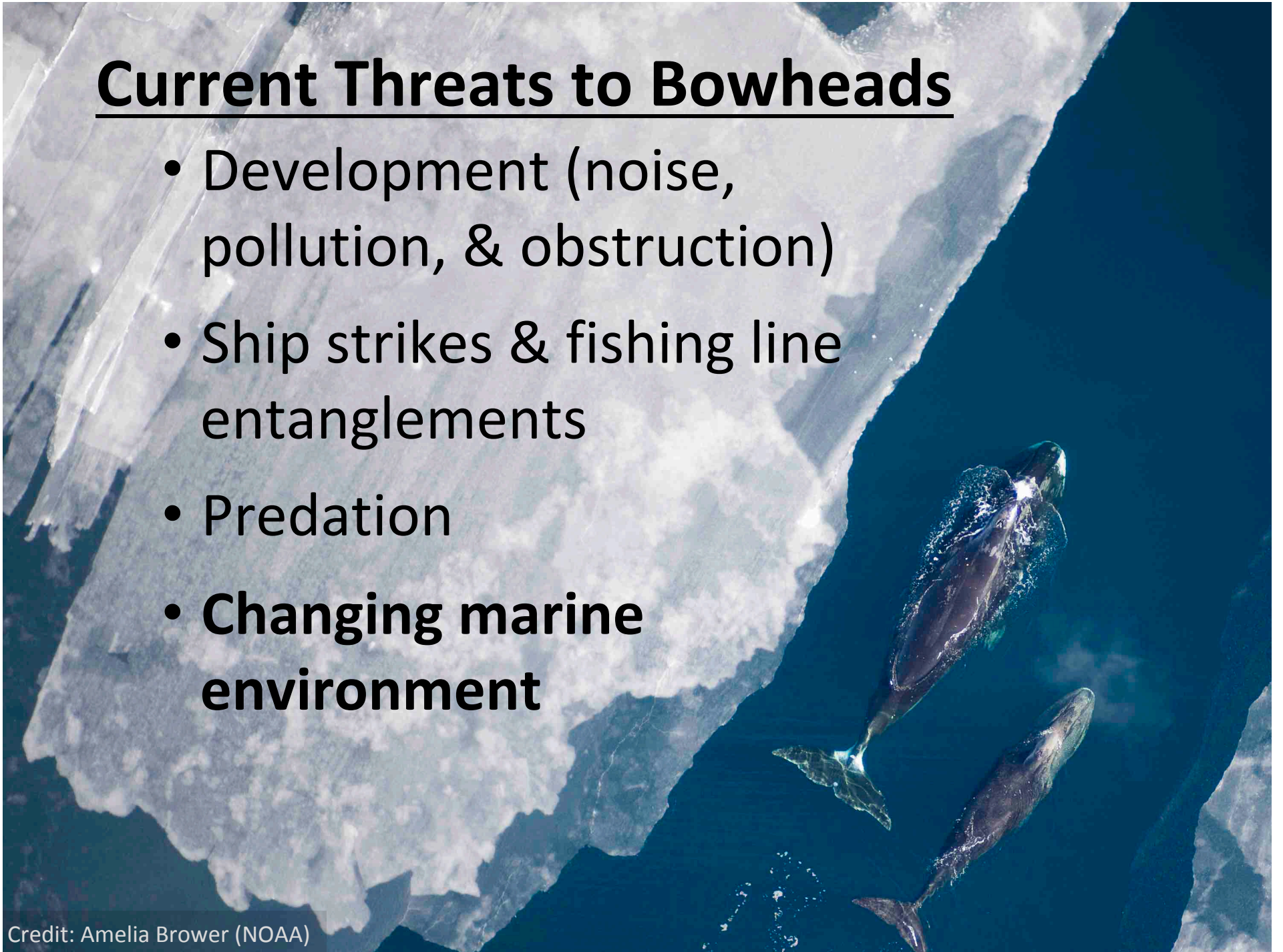
Produced by:
Matt Druckenmiller, National Snow and Ice Data Center
Craig George, NSB Department of Wildlife Management
Josh Jones, University of Alaska Fairbanks



Credit: Vicki Beaver (NSB)

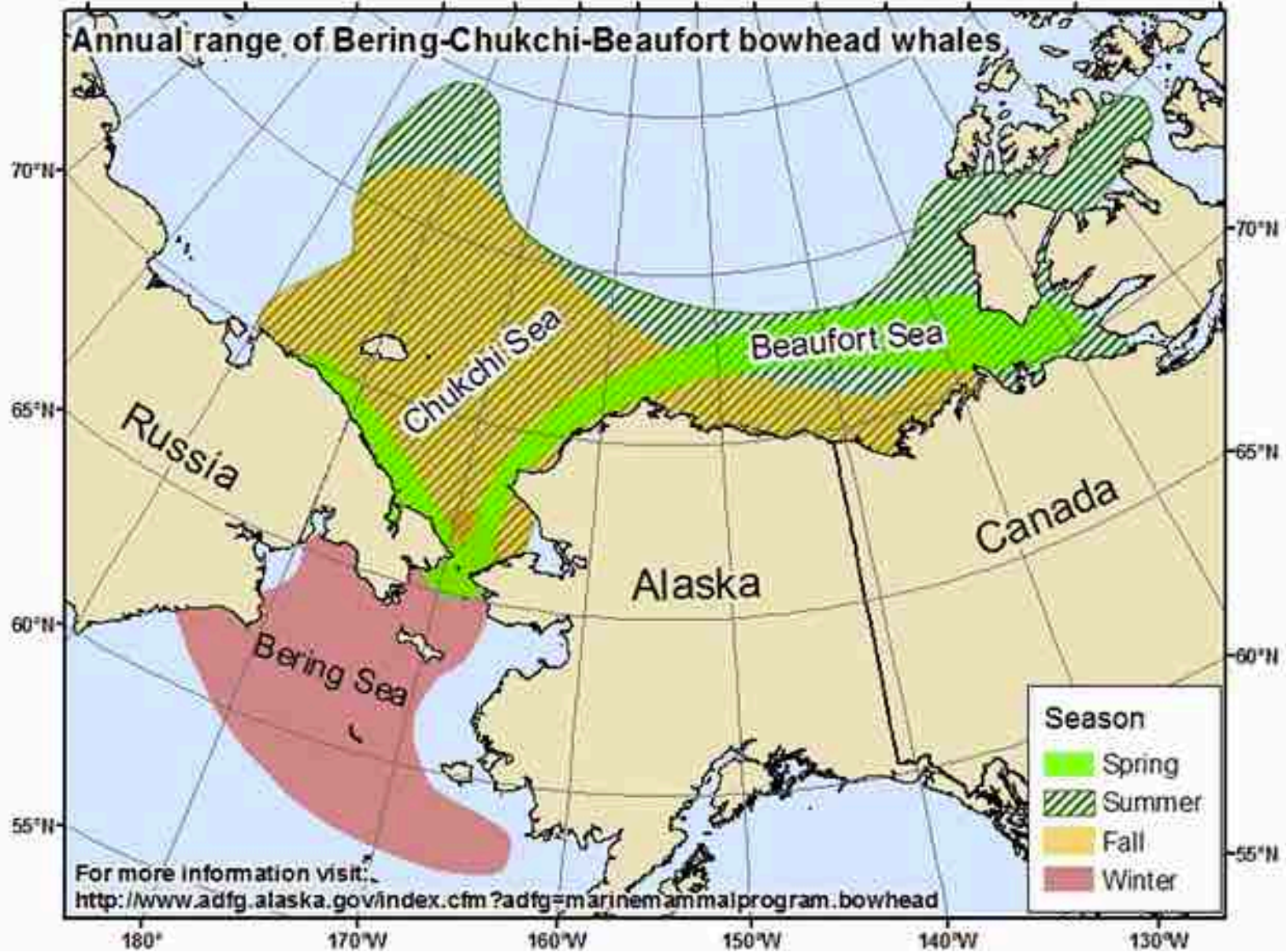
Current Threats to Bowheads

- Development (noise, pollution, & obstruction)
- Ship strikes & fishing line entanglements
- Predation
- **Changing marine environment**



140°E 150°E 160°E 170°E 180° 170°W 150°W 130°W 120°W 110°W 100°W 90°W

Annual range of Bering-Chukchi-Beaufort bowhead whales



Arctic Sea Ice Extent

September
1979
vs
September
2016





Methods for observing whales:

- Ice-based surveys
- Surveys from aircraft
- Satellite tracking
- Morphometrics

“It’s a good time to be a bowhead”

~ Craig George (North Slope Borough Biologist)

- Bowhead whales may be spending longer periods of time feeding in Arctic waters.
- Average bowhead body condition increased over the period 1989 to 2011.
- Bowhead population size is increasing rapidly and may be linked to increased ocean productivity.

An aerial photograph of several bowhead whales in the deep blue ocean. One whale is in the upper left, another in the lower left, and a third in the lower center. A group of four whales is visible in the upper right. The water is a deep, clear blue, and the whales' dark, rounded backs are prominent. The lighting is bright, suggesting a sunny day.

“It’s a good time to be a bowhead”,
but the future is uncertain.

Credit: Amelia Brower (NOAA)